Recently S. Yamamoto has developed an elegant way to represent iterated integrals involving the forms $dt/t$ and $dt/(1-t)$ using 2-labeled posets. We consider two extensions. First, we extend Yamamoto’s notion to get a correspondence between $(r+1)$-labeled posets and iterated integrals involving $dt/t$ and $dt/(\epsilon^{-i} - t)$, $0 \leq i \leq r - 1$, where $\epsilon$ is a primitive $r$th root of unity. Second, we develop an analogous formalism giving a correspondence between nested sums and posets labeled with the positive integers. (Received January 09, 2015)